AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A packet service method for a base station controller (BSC) in a mobile communication system, comprising the steps of:

receiving a packet to be transmitted for a mobile station (MS);

adding a field containing time information allowing a base station transceiver sub-system (BTS) to transmit the packet to the MS on a radio link within a valid time necessary for packet transmission on a radio link to the received packet; and

transmitting the packet including the field to a base station transceiver sub-system (BTS), wherein the BTS is connected to the MS in a handoff state.

2. (Original) The packet service method of claim 1, further comprising the steps of:

determining whether a sequence number is to be used for the packet transmission; and

adding a field containing the sequence number of the packet to the packet if it is determined that the sequence number is to be used.

3. (Original) The packet service method of claim 1, wherein the time information is an action time when the packet is to be transmitted on the radio link.

4. (Original) The packet service method of claim 1, wherein the time information includes an action time when the packet is to be transmitted on the radio link and a waiting time for which the packet waits to be transmitted until there is an available radio link.

5. (Currently Amended) A packet service method for a base station transceiver sub-system (BTS) in a mobile communication system, comprising the steps of:

storing a packet received from a base station controller (BSC);

determining whether a current time is an action time when the received packet is to be transmitted based on time information set in a predetermined field of the packet; and

transmitting the packet to a mobile station (MS) on a radio link if the current time is an action time,

wherein the BTS is connected to the MS in a handoff state.

6. (Original) The packet service method of claim 5, wherein the action time is a time set in the predetermined field of the packet.

7. (Original) The packet service method of claim 5, wherein the action time is sum of a time set in the predetermined field of the packet and a pre-negotiated time.

8. (Currently Amended) A packet service method for a base station transceiver sub-system (BTS) in a mobile communication system, comprising the steps of:

storing a packet received from a base station controller (BSC);

determining whether there is a available radio link;

transmitting the packet to a mobile station(MS) on a radio link if there is a available radio link;

determining whether a waiting time set in a predetermined field of the packet has expired if there is no available radio link; and

discarding the packet if the waiting time has expired and determining whether there is an available radio link if the waiting time has not expired,

wherein the BTS is connected to the MS in a handoff state.

9. (Currently Amended) A packet service method for a base station transceiver sub-system (BTS) in a mobile communication system, comprising the steps of:

storing a packet received from a base station controller (BSC);

determining whether a waiting time set in a predetermined field of the packet has expired;

discarding the packet if the waiting time has expired and determining whether there is an available radio link if the waiting time has not expired;

determining whether the waiting time has expired if there is no available radio link and determining whether the current time is an action time based on the time information if there is an available radio link; and

transmitting the packet to a mobile station (MS) on the radio link at the action time and determining whether the waiting time has expired if the current time is not the action time, wherein the BTS is connected to the MS in a handoff state.

10. (Original) The packet service method of claim 9, wherein the action time is sum of a time set in the predetermined field of the packet.

11. (Original) The packet service method of claim 9, wherein the action time is sum of a time set in the predetermined field of the packet and a pre-negotiated time.

12. (Currently Amended) A packet service method for a base station controller (BSC) in a mobile communication system, comprising the steps of:

receiving a packet to be transmitted for a mobile station (MS);

determining whether a sequence number is to be used for the packet;

adding a field containing the sequence number of the packet to the packet if it is determined that the sequence number is to be used; and

transmitting the packet including the field to a base station transceiver sub-system (BTS), wherein the BTS is connected to the MS in a handoff state.

13. (Currently Amended) A packet service method for a base station transceiver sub-system (BTS) in a mobile communication system, comprising the steps of:

storing a packet received from a mobile station (MS);

determining whether a sequence number is to be used for the packet;

adding a field containing the sequence number of the packet to the packet if it is determined that the sequence number is to be used; and

transmitting the packet including the field to a base station controller (BSC), wherein the BTS is connected to the MS in a handoff state.

14. (Currently Amended) A packet service method for a base station controller (BSC) in a mobile communication system, comprising the steps of:

storing a packet received from a base station transceiver sub-system (BTS);

determining whether a current time is an action time based on a predetermined period;

checking whether the stored packet has an error at the action time; and

transmitting the packet to a higher layer system if the packet has no errors,

wherein the BTS is connected to an MS in a handoff state.

15. (Currently Amended) A packet service method for a base station controller (BSC) in a mobile communication system, comprising the steps of:

storing a packet received from a base station transceiver sub-system (BTS);

determining whether a sequence of the packet is valid ~~or not~~ by checking a sequence number set in the packet; and

transmitting the packet to a high layer system if the packet sequence is valid and discarding the packet if the packet sequence is invalid,

wherein the BTS is connected to an MS in a handoff state.

16. (Currently Amended) A packet service method in a mobile communication system, comprising the steps of:

adding a field containing time information necessary for packet transmission on a radio link to a packet to be transmitted for a mobile station (MS) in a base station controller (BSC) and transmitting the packet including the field from the BSC to a base station transceiver sub-system (BTS);

storing the packet received from the BSC in the BTS;

determining whether a current time is an action time based on the time information set in the field of the packet in the BTS; and

transmitting the packet from the BTS to the MS on a radio link at the action time,

wherein the BTS is connected to the MS in a handoff state.

17. (Original) The packet service method of claim 14, wherein the action time is a time set in the field.

18. (Original) The packet service method of claim 14, wherein the action time is the sum of a time set in the field and a pre-negotiated time.

19. (Original) The packet service method of claim 14, further comprising the step of adding a field containing a sequence number of the packet to the packet in the BSC.

20. (Original) The packet service method of claim 14, wherein the time information includes a waiting time for which the packet waits to be transmitted until there is an available radio link, further comprising the step of discarding the packet if the packet is not transmitted until the waiting time expires.

21. (Currently Amended) A packet service method in a mobile communication system, comprising the steps of:
    storing a packet received from a mobile station (MS) in a base station transceiver sub-system (BTS), adding a field containing a sequence number of the packet to the packet in the BTS, and transmitting the packet including the field from the BTS to a base station controller (BSC);
    determining whether a sequence of the packet is valid or not by checking the sequence number set in the header of the packet in the BSC; and
    transmitting the packet from the BSC to a high layer system if the packet sequence is valid and discarding the packet if the packet sequence is invalid,
    wherein the BTS is connected to the MS in a handoff state.